



Fact Sheet

NPDES Permit Number: AK-000050-7

Date: July 26, 2000

Public Notice Expiration Date: September 11, 2000

**Contact: Kelly Huynh (206) 553-8414 or
1-800-424-4372 (within Region 10 only)
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The U.S. Environmental Protection Agency (EPA) Plans to Reissue the Wastewater Discharge Permit for:

**Alaska Nitrogen Products LLC
P.O. Box 575
Kenai, Alaska 99611**

and the State of Alaska proposes to certify the Permit and issue a Consistency Determination

EPA Proposes NPDES Permit Reissuance.

EPA proposes to reissue the existing National Pollutant Discharge Elimination System (NPDES) permit to Alaska Nitrogen Products LLC (previously known as Unocal). The draft permit sets conditions on the discharge--or release--of pollutants from the Alaska Nitrogen Products LLC, Kenai Facility to Cook Inlet.

This Fact Sheet includes:

- information on public comment, public hearing, and appeal procedures
- a description of the current discharge
- a listing of proposed and previous effluent limitations and other conditions
- a map and description of the discharge location
- detailed background information supporting the conditions in the permit

EPA Invites Comments on the Draft Permit.

EPA will consider all comments before issuing a final permit. Those wishing to comment on the draft permit may do so in writing by the public notice expiration date at the top of this page. After the comment period closes and all comments have been considered, EPA's regional Office of Water Director will make a final decision regarding permit reissuance.

If no comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If comments are received, EPA will address the significant comments and issue the permit along with a response to comments. The permit will become effective 33 days after the issuance date, unless a request for an evidentiary hearing is submitted within 33 days.

Alaska State Certification.

EPA requests that the Alaska Department of Environmental Conservation (ADEC) certify the NPDES permit under section 401 of the Clean Water Act. EPA may not re-issue the NPDES permit until the state has granted, denied, or waived certification.

Consistency Determination.

The State of Alaska, Office of Management and Budget, Division of Governmental Coordination (DGC), intends to review this action for consistency with the approved Alaska Coastal Management Program (ACMP). DGC must receive written comments by 5:00 p.m. on August 28, 2000. For more information concerning this review, please contact Maureen McCrea at (907) 269-7473; maureen_mccrea@gov.state.ak.us; or 550 W. 7th Avenue, Suite 1660, Anchorage, Alaska 99501.

Documents are Available for Review.

The draft NPDES permit and related documents can be reviewed at EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday. To request copies and other information, contact the NPDES Permits Unit at:

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, OW-130
Seattle, Washington 98101
(206) 553-0523 or
1 (800) 424-4372 (within Region 10 only)

The fact sheet and draft permit are also available at:

EPA Anchorage Operations Office
222 West 7th Avenue, #19
Anchorage, Alaska 99513-7588
(907) 271-5083

EPA Kenai Operations Office
Kenai River Center
514 Funny River Road
Soldotna, Alaska 99669
(907) 260-4872

Alaska Department of Environmental Conservation
Attn: Div of Air and Water Quality
610 University Ave.
Fairbanks, AK 99709-3643

The draft permit and fact sheet can also be found by visiting the Region 10 web site at www.epa.gov/r10earth/water.htm. For technical questions regarding the permit or fact sheet, contact Kelly Huynh at the phone numbers or email address at the top of this fact sheet. Those with impaired hearing or speech may contact a TDD operator at 1-800-833-6384. Ask to be connected to Kelly Huynh at the above phone numbers. Additional services can be made available to persons with disabilities by contacting Kelly Huynh.

TABLE OF CONTENTS

LIST OF ACRONYMS	6
BACKGROUND INFORMATION	
I. APPLICANT	7
II. PLANT DESCRIPTION	7
A. Facility Activity	7
B. Wastewater Sources and Treatment	8
III. RECEIVING WATER	9
IV. FACILITY BACKGROUND	10
A. Permit History	10
B. Compliance History	10
V. EFFLUENT LIMITATIONS	10
A. Background	10
B. Effluent Limitations for Outfall 001- Ammonia and Urea Plant Discharge	11
VI. MONITORING REQUIREMENTS	12
A. Effluent Monitoring of Outfall 001 - Ammonia and Urea Plant Discharge	12
B. Whole Effluent Toxicity Testing	13
C. Ambient Monitoring	13
D. Biocides	14
E. Quality Assurance Plan	15
F. Representative Sampling	15
VII. BEST MANAGEMENT PRACTICES AND POLLUTION PREVENTION	15
VIII. OTHER PERMIT CONDITIONS	16
IX. OTHER LEGAL REQUIREMENTS	16
A. Endangered Species Act	16
B. Essential Fish Habitat	17
C. Tribal Consultation	18
D. State Certification	18
E. Coastal Zone Management Act (CZMA)	18
F. Permit Expiration	18
REFERENCES	19

APPENDIX A - ALASKA NITROGEN PRODUCTS FACILITY MAP	A-1
APPENDIX B - ALASKA NITROGEN PRODUCTS TREATMENT PROCESSES	B-1
APPENDIX C - BASIS FOR EFFLUENT LIMITATIONS	C-1
APPENDIX D - SAMPLE REASONABLE POTENTIAL CALCULATION FOR TOTAL AMMONIA	D-1
APPENDIX E - ESSENTIAL FISH HABITAT ASSESSMENT	E-1

LIST OF ACRONYMS

ADEC - Alaska Department of Environmental Conservation
AML - average monthly limit

BAT - best available technology economically achievable
BCT - best conventional pollutant control technology
BPT - best practicable control technology currently available
BMPs - best management practices

C_u - upstream concentration
 C_e - maximum projected effluent concentration
 C_d - concentration at the edge of the mixing zone
CFR - Code of Federal Regulations
cfs - cubic feet per second
CV - coefficient of variation

D - dilution
DMRs - Discharge Monitoring Reports

EPA - United States Environmental Protection Agency

lb/day - pounds per day

MDL - maximum daily limit
Fg/L - micrograms per liter
mgd - million gallons per day
mg/day - milligrams per day
mg/L - milligrams per liter
MLLW - Mean Lower Low Water

N - nitrogen
NMFS - National Marine Fisheries Service
NPDES - National Pollutant Discharge Elimination System

SIC - State Industrial Code

TSD -EPA's *Technical Support Document for Water Quality-based Toxics Control*
 TU_c - chronic toxic units

USFWS - United States Fish and Wildlife Service

WLA - wasteload allocation

BACKGROUND INFORMATION

I. APPLICANT

Alaska Nitrogen Products LLC NPDES Permit No: AK-000050-7

Mailing Address:	Facility Location:
PO Box 575	Mile 21 of Kenai Spur Highway
Kenai, Alaska 99611	Kenai, Alaska

Contact: John Hammelman, Environmental Engineering

II. PLANT DESCRIPTION

A. Facility Activity

Alaska Nitrogen Products LLC (hereafter “Alaska Nitrogen Products”) is a large nitrogen manufacturing fertilizer complex consisting of two ammonia plants, two urea plants, two associated utility plants, and a loading wharf (SIC 2873). The facility was originally constructed in 1966-1968 with one ammonia and one urea plant. It was significantly enlarged in 1977-1978 with the addition of another ammonia and urea plant. The Alaska Nitrogen Products Plant occupies 90 acres approximately 10 miles north of the town of Kenai, and is located at Mile 21 of the Kenai Spur Highway, along the bluff above Cook Inlet, Alaska. The facility employees approximately 300 employees. See Appendix A for maps of the facility and outfall locations.

Ammonia Plants #1 and #4

To produce ammonia, natural gas and steam are reacted at a high temperature in the primary and secondary reformers to produce hydrogen. Air is then added to provide nitrogen, the mixture is purified to remove the byproduct (carbon dioxide), and the mixture is compressed to 3,500 psig and heated to 900EF to form gaseous ammonia. The anhydrous (“without water”) ammonia is then liquified by cooling to -28EF, and is stored in one of two atmospheric storage tanks (30,000 and 50,000 tons respectively). Approximately half of the tanks are then shipped to the west coast and foreign countries for sale. The shipped product is used primarily as a nitrogen source in fertilizers. However, a small percentage is sold for commercial refrigeration, plastics manufacture, photocopying and blueprinting, or cleaning and degreasing. The average daily production of anhydrous ammonia is 3,619 tons/day.

Urea Plants #2 and #5

The anhydrous ammonia and carbon dioxide recovered from the ammonia process are mixed together at a high pressure and temperature to form urea. Any water from the reaction is removed. In plant #2 the urea is crystallized, dried, and transported to the top of a tower where it is melted and then cooled (by spraying),

forming the prill product. The prills are transported via an enclosed conveyor belt to a 50,000 ton bulk storage warehouse. Plant #5 concentrates the urea by evaporation and then sprays it in a molten state into large rotating cylindrical granulators to make a granular product. The granules are then transported by an enclosed conveyor belt to a 80,000 ton bulk storage warehouse. The urea is transported from the warehouses to the wharf (on covered conveyor belts), where the product is loaded on ships and barges for customers overseas and along the west coast. The finished product is primarily used as a fertilizer. However, a small percentage may be combined with formaldehyde to produce resins and glues, or used as a protein nitrogen supplement in cattle feed. The average daily production of prilled and granulated urea is 3,089 tons/day.

Utility Plants #3 and #6

The utility plants generate electricity, steam, and dry compressed air for use in the ammonia and urea plants. Well water is demineralized for use as makeup for the natural gas fired steam boilers. Some well water is also used for cooling water in the plants. Electricity for plant use is produced by natural gas fired piston and turbine generators. The utility plants also control the waste water effluent system.

The proposed permit does not cover the discharge of stormwater. Alaska Nitrogen Products has a Storm Water Multi-Sector General Permit (number AKR-05A097) that permits the discharge of stormwater. The domestic sewage and graywater generated at the plants is also not covered by the draft permit. The sanitary waste is treated by a large onsite leachate septic system.

B. Wastewater Sources and Treatment

Ammonia Plants

Approximately 114,000 gallons per day (gpd) of influent from the ammonia plants goes to the general effluent (GE) treatment system. The influent is from deionization (i.e. water treatment), boiler blowdown, plant laboratory, monitoring well purge water, process area drainage, and compressor building drainage. Air compressor and carbon dioxide (CO₂) knockout pots also drain to the GE system. The ammonia process condensate is sent through the process condensate stripper and recycled through the boilers. The influent is pH neutralized prior to entering the GE Lead Skim Pond (capacity 100,000 gallons) and drained through a submerged inverted drawoff and gate valve box into the GE Lag Skim Pond (capacity 100,000 gallons). Finally, the flow is drawn off into the GE Main Pond (capacity 1.3 million gallons) and then process effluent Main Pond before being discharged to Cook Inlet, via diffuser, at a maximum rate of 1.561 million gallons per day (mgd). See Appendix B for a diagram of the ammonia and urea treatment processes.

Urea Plants

The process effluent (PE) treatment system accepts approximately 633,000 gpd of influent consisting of deionization backwash, boiler blowdown water, and cooling tower blowdown. Process condensate is recycled to the wasteheat boilers or recycled to the cooling towers before being discharged to the PE treatment system. Any waste through the floor drain is routed to an oil coalesser before going to the hydrolyzer stripper or desorber rectifier and being recycled back to the urea plants. The backwash and rinse water from the deionization system is routed to a neutralization tank (that uses soda ash) for pH control prior to entering the PE system. The influent is collected in a sump in the Utility Plant and pumped into the PE Lead Settling Pond (capacity 100,000 gallons). Once there, a drawoff system allows the water to run into the PE Lag Settling Pond (capacity 100,000 gallons) and finally into the PE Main Equalization Pond (capacity 1.4 million gallons). Any waste oil is skimmed from the ponds and burned. The PE Main Equalization Pond receives the GE effluent prior to discharge (approximately 734,000 gallons/day) to Cook Inlet. The total retention time in the two treatment systems is up to three days depending on the pumping rates. All six of the treatment ponds are lined in concrete.

Effluent Sludge

Approximately 3,650 to 7,150 cubic feet of effluent sludge accumulates each year in the bottom of the ponds. This sludge primarily consists of water hardness minerals removed in the deionization process. Each summer, the ponds are drained and the sludge is collected by vacuum trucks and transported to five drying beds. A perforated pipe collects the water that drains from the drying beds and is pumped to the effluent ponds for treatment. In the spring, the sludge thaws and is removed from the beds for disposal. At this point, the sludge is being stored until a proper disposal method is found. The draft permit does not address the disposal or handling of sludge. Sludge disposal is addressed by the Resource Conservation and Recovery Act.

III. RECEIVING WATER

Treated effluent is pumped from the PE main equalization pond to outfall 001 at the loading wharf via a ten-inch pipe. At the wharf, the pipe splits into two eight-inch pipes before being diffused at 15 feet Mean Lower Low Water (MLLW) and 20 feet MLLW into Cook Inlet. The discharge is approximately 1,600 feet offshore of the loading wharf. The discharge of outfall 001 is at latitude 60E 40' 17" N, and longitude 151E 23' 17" W.

Cook Inlet is protected by the State of Alaska for water supply (aquaculture, seafood processing and industrial); water recreation (contact and secondary); growth and propagation of fish, shellfish, other aquatic life, and wildlife; and harvesting for consumption of raw mollusks or other raw aquatic life.

A chronic area of dilution (i.e. mixing zone) of 1:721 has been proposed by the state for the discharge of ammonia. This chronic mixing zone is described as a cylinder,

extending from the discharge point to the water surface, with a radius of 507 meters, and centered over the diffusers. Chronic areas of dilution equal to 1:224 (cylinder radius 3.5 m) have also been proposed by the state for mercury, zinc, copper, arsenic, and chronic whole effluent toxicity. Acute mixing zones for zinc, arsenic, copper, mercury, and ammonia equal to an area of dilution of 1:102 (cylinder radius 1.0 m) have also been proposed by the state. If different sized mixing zones are certified by the state, the final permit will reflect these. In contrast, if mixing zones are not provided by the state, end of pipe limits will be included in the final permit.

IV. FACILITY BACKGROUND

A. Permit History

The first National Pollutant Discharge Elimination System (NPDES) permit issued to the fertilizer plant was in December 1974 to Collier Carbon and Chemical Corporation. In 1978, the permittee's name was changed to Union Chemicals Division, Union Oil Company of California. EPA reissued the NPDES permit in March 1983. In February 1986 the company's name changed to Unocal Chemicals Division, Unocal Corporation. The second permit expired April 12, 1988. The third NPDES permit was reissued on June 30, 1989 and expired on August 1, 1994. During that time the company's name changed to Unocal Petroleum Products and Chemical Division. On January 31, 1994, Unocal submitted a timely NPDES permit application for reissuance. Therefore, under the provisions of 40 CFR 122.6, the facility is authorized to continue discharging under the terms of the expired permit until a new permit is effective. In May 1999 the company's name changed to Alaska Nitrogen Products LLC.

B. Compliance History

Alaska Nitrogen Products has generally shown compliance from January 1989 to August 1999. During this time no nitrogen violations were reported while one oil and grease, one pH, and twelve ammonia violations were reported.

V. EFFLUENT LIMITATIONS

A. Background

EPA followed the Clean Water Act, State and federal regulations, and EPA's 1991 *Technical Support Document for Water Quality-Based Toxics Control* to develop the draft effluent limits. In general, the Clean Water Act requires that the effluent limits for a particular pollutant be the more stringent of either the technology-based or water quality-based limits.

EPA's technology-based limits are based on the effluent quality that is achievable using readily available technology. EPA develops these limits based either on

federally-promulgated effluent guidelines or, where such guidelines have not been promulgated for an industry, on best professional judgement.

The Agency evaluates the technology-based limits to determine whether they are adequate to ensure that water quality standards are met in the receiving water. If the limits are not adequate, EPA must develop and apply water quality-based limits. These limits are designed to prevent exceedences of the Alaska water quality standards in Cook Inlet.

B. Effluent Limitations for Outfall 001- Ammonia and Urea Plant Discharge

Table 1 compares the effluent limits in the draft permit with those in the 1989 permit. The nitrogen and ammonia limits were derived from technology-based effluent guidelines. The oil and grease, pH, and narrative limits are based on Alaska's water quality standards. Appendix C provides the basis for the development of the effluent limits.

Table 1: Comparison of Effluent Limitations from Outfall 001				
Parameter	Effluent Limitations			
	Maximum Daily		Monthly Average	
	1989 Permit	Draft Permit	1989 Permit	Draft Permit
Total Ammonia as N, mg/L lbs/day	--- 3786	140 1818	--- 1925	71 925
Organic Nitrogen as N, mg/L lbs/day	--- 5557	204 2657	--- 2973	109 1421
Oil and Grease, mg/L 0 through 6 months 7 through 12 months 1 year to expiration	25 20 15	15	15 15 ---	---
pH, standard units	6.0 - 9.0 ¹	6.5 - 8.5 ¹	---	---
Note: 1 The total time outside the required range shall not exceed 7 hours and 26 minutes in any calendar month, and no individual excursion shall exceed 60 minutes.				

There shall be no discharge of floating solids, visible foam, or oily wastes which produce a sheen on the surface of the receiving water.

VI. MONITORING REQUIREMENTS

Section 308 of the Clean Water Act and the federal regulations at 40 CFR 122.44(i) require that permits include monitoring to determine compliance with effluent limitations. Monitoring may also be required to gather data for future effluent limitations or to monitor effluent impacts on receiving water quality. Alaska Nitrogen Products is responsible for conducting the monitoring and for reporting the results to EPA on monthly Discharge Monitoring Reports (DMRs).

A. Effluent Monitoring of Outfall 001 - Ammonia and Urea Plant Discharge

Table 2 compares the effluent monitoring requirements in the 1989 permit with the monitoring requirements in the draft permit.

Table 2: Effluent Monitoring Requirements for Outfall 001				
Parameter	Monitoring Requirements			
	1989 Permit		Draft Permit	
	Frequency	Sample Type	Frequency	Sample Type
Flow, mgd	Continuous	Recording	Continuous ¹	Recording
Total Ammonia as N, mg/L	Weekly	24-hour Composite	Weekly	24-hour Composite
Organic Nitrogen as N, mg/L	Weekly	24-hour Composite	Weekly	24-hour Composite
Oil and Grease ³ , mg/L	Weekly	Composite ²	Weekly	24-hour Composite
Total Hydrocarbons, mg/L	Weekly	Composite ²	---	---
Total aqueous hydrocarbons (TAqH), Fg/L	---	---	Quarterly ⁴	24-hour Composite
Total aromatic hydrocarbons (TAH), Fg/L	---	---	Quarterly ⁴	24-hour Composite
pH, s.u.	Continuous	Recording	Continuous	Recording
Temperature, EC	---	---	Continuous ⁵	Recording
Chronic Toxicity, TU _c Acute Toxicity, TU _a	Quarterly Quarterly for first year	Grab Grab	Quarterly ---	24-hour Composite ---

Table 2: Effluent Monitoring Requirements for Outfall 001				
Parameter	Monitoring Requirements			
	1989 Permit		Draft Permit	
	Frequency	Sample Type	Frequency	Sample Type
Notes:				
1	Report the monthly average flow			
2	The flow-weighted average of 4 individually analyzed grab samples collected over a 24-hour period.			
3	Method 1664 may be used.			
4	The quarterly TAqH and TAH monitoring is required during years 1, 2, and 3 of the permit.			
5	Report the monthly instantaneous maximum			

B. Whole Effluent Toxicity Testing

The 1989 permit required Alaska Nitrogen Products to conduct quarterly chronic whole effluent toxicity testing using an echinoderm and a mollusc. In addition, quarterly acute whole effluent toxicity testing was required during the first effective year of the permit. In reissuing this permit, EPA has reviewed the data generated by Alaska Nitrogen Products to fulfill this requirement. Utilizing the chronic mixing zone, the data does not show reasonable potential to contribute to an exceedence of State water quality standards for chronic toxicity.

The EPA believes that it is important to analyze the potential toxicity of the effluent utilizing the new mixing zone as well as to have current data when reissuing the permit. Therefore, the draft permit requires Alaska Nitrogen Products to conduct (the more conservative) quarterly chronic whole effluent toxicity testing, using two invertebrate species. The tests shall be conducted on 24-hour composite samples using the *Mytilus spp.* (Mussel) or *Crassostrea gigas* (oyster) for the larval development test and *Strongylocentrotus purpuratus* (urchin) or *Dendraster excentricus* (sand dollar) for the fertilization test.

C. Ambient Monitoring

The reasonable potential analysis that considered whether or not total ammonia exceeded water quality standards was based on monitoring data gathered in 1995. This 1995 data for pH, temperature, and salinity was gathered at the East Forelands. However, background concentrations of total ammonia were assumed to be zero within Cook Inlet due to a lack of monitoring data. The objective of the ambient monitoring program is to determine the background levels of total ammonia in Cook Inlet and determine if the water quality standards are being met at the edge of the mixing zone for ammonia.

The Permittee must implement the ambient monitoring requirements in Table 3 within **6 months of the effective date** of the permit. Based on the results of this study, the EPA can determine whether or not the permit limits need to be revised upon permit renewal.

Table 3: Ambient Monitoring Requirements			
Parameter	Frequency	Sample Type	Location
Total Ammonia (as N), mg/L	Quarterly	Grab	5 locations including background, 3 sites at the edge of the mixing zone, & one site w/in the mixing zone
pH, s.u.	Quarterly	Grab	Background
Temperature, EC	Quarterly	Measurement	Background
Salinity, g/kg	Quarterly	Grab	Background

D. Biocides

The Alaska Nitrogen Products facility includes two cooling towers that utilize biocides to limit algal growth. Of the 126 toxic pollutants listed in 40 CFR 423 Appendix A, only chromium and zinc may be used in maintenance chemicals. Biocides may be discharged when used to limit algal growth, provided that the following conditions are met:

1. If one biocide is used, the maximum estimated concentration in the discharge divided by the acute dilution factor (for copper, mercury and ammonia) at the edge of the mixing zone will not exceed 0.01 times that lowest 96-hour LC_{50} for at least two sensitive marine species;
2. If two biocides are used, the sum of the maximum estimated concentrations multiplied by four and divided by the acute dilution factor for ammonia, copper, and mercury must not exceed 0.01 times the sum of the lowest 96-hour LC_{50} 's for at least two sensitive marine species;
3. The additional biocide(s) show minimal toxicity for two sensitive species; and
4. The discharged concentrations of each chemical component in the product, when divided by the acute mercury, copper, ammonia dilution factor at the edge of the mixing zone, does not exceed applicable EPA Quality Criteria for Water or EPA water quality advisories, including that for tributyltin.

All calculations and marine toxicity data shall be based on the whole product (not on active ingredients only). The information shall be submitted to EPA and ADEC **30 days** prior to the proposed use by certified mail. If EPA or ADEC

determines that the biocide(s) cannot be discharged without violating state water quality standards, the permittee will be notified as such within 30 days.

Compliance with the biocide provisions shall be monitored and records shall be maintained for the produce, dates of use, quality used, maximum estimated concentration in the discharge on those dates, and any other relevant information.

E. Quality Assurance Plan

It is important that data collected to evaluate compliance with the permit limits or to evaluate the effects of the discharge on the receiving water be accurate. To ensure accuracy, the draft permit requires Alaska Nitrogen Products to develop and implement a Quality Assurance Plan. The Quality Assurance Plan consists of standard operating procedures permittees must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The draft permit requires Alaska Nitrogen Products to complete and implement the Quality Assurance Plan within **60 days of the effective date** of the permit.

F. Representative Sampling

The draft permit has expanded the requirement in the federal regulations regarding representative sampling (40 CFR 122.41[j]). This provision now specifically requires sampling whenever a bypass, spill, or non-routine discharge of pollutants occurs, if the discharge may reasonably be expected to cause or contribute to a violation of an effluent limit. This provision is included in the draft permit because routine monitoring could miss permit violations and/or water quality standards exceedences due to bypasses, spills, or non-routine discharges. This requirement directs Alaska Nitrogen Products to conduct additional, targeted monitoring to quantify the effects of these occurrences on the final effluent.

VII. BEST MANAGEMENT PRACTICES AND POLLUTION PREVENTION

Best management practices (BMPs) and pollution prevention (P2) are measures that are intended to prevent or minimize the generation and the potential for the release of pollutants from industrial facilities to the waters of the United States through normal operations and ancillary activities. The 1989 permit required Alaska Nitrogen Products to develop and implement a BMP plan. Alaska Nitrogen Products was required to evaluate the adequacy of the plan every January and revise it when necessary. Whenever a hazardous materials incident occurred, Alaska Nitrogen Products was to evaluate the need for improved practices. The draft permit requires the permittee to revise the plan whenever necessary, keep an updated plan on file for inspection, and include P2 activities.

VIII. OTHER PERMIT CONDITIONS

In addition to facility-specific requirements, sections III, IV, and V of the draft permit contains “boilerplate” requirements. Boilerplate is standard regulatory language that applies to all permittees and must be included in NPDES permits. Because boilerplate requirements are based on regulations, they cannot be challenged in the context of an NPDES permit action. The boilerplate covers requirements such as monitoring, recording, and reporting requirements, compliance responsibilities, and general requirements.

IX. OTHER LEGAL REQUIREMENTS

A. Endangered Species Act

The Endangered Species Act (ESA) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species. The EPA has tentatively determined that the discharge has **no effect** on the Short tailed albatross, Steller sea lion, Fin whale, and Humpback whale and is **not likely to adversely effect** the Steller’s eider.

EPA requested lists of threatened and endangered species from the NMFS and the USFWS in letters dated November 4, 1999. In a letter dated November 16, 1999 the USFWS indicated that the Steller’s eider (*Polysticta stelleri*) and the Short-tailed albatross (*Phoebastria albatrus*) may occur within the discharge area.

The Steller’s eiders are marine, diving ducks that feed primarily on mollusks and crustaceans by diving and dabbling in shallow water habitats. Main food staples for wintering eiders include the common blue mussel and the sand-hopper. The majority of eiders winter from the eastern Aleutian Islands to the southern portion of Cook Inlet in shall, near-shore marine waters. The Steller’s eider breeds in the arctic coastal plain in northern Alaska and nests on tundra, adjacent to shallow ponds, or within drained lake basins in the central arctic coastal plain, primarily near Barrow. Factors affecting the eider include nonprotected breeding areas, oil spills, overutilization, natural predators, and occasional subsistence hunting. Commercial and recreational boats traveling through protected lagoons near the Alaska Peninsula, Kodiak, or Cook Inlet communities may disturb wintering birds.

Available documentation on the albatross indicates that it is highly unlikely it ever bred in Alaska and that during the non-breeding season (summer) the albatross is usually sighted in the northern Gulf of Alaska, Aleutian Islands, and Bering Sea.

In a letter dated February 14, 2000 the NMFS indicated that the Steller (northern) sea lion (*Eumetopias jubatus*) occurs in the area of discharge. In addition, the Fin

whale, and the Humpback whale are occasionally found in lower Cook Inlet waters. The Steller sea lions are sighted infrequently in the Cook Inlet area and only during open water seasons, associated with salmon returns. No documented sea lion rookeries or haulout sites occur near the discharge with the nearest rookeries located in the Gulf of Alaska. Critical habitat for the sea lion, Fin whale, and Humpback whale has not been identified within Cook Inlet or the discharge location. The NMFS has stated that given the distribution and limited seasonal occurrence of the sea lion, Humpback whale, and Fin whale in the Inlet, none of the ESA listed species should be adversely impacted by Alaska Nitrogen Product's discharge.

The NMFS also indicated that the Beluga whale (*Delphinapterus leucas*) is presently listed as candidate species and is proposed as depleted stock under the Marine Mammal Protection Act. Although the Beluga's are not yet protected under the ESA, the NMFS feels it's a species of special concern and several Cook Inlet tribes have expressed concern about the effects of Cook Inlet dischargers on the Belugas (see discussion under Tribal Consultation, below). Therefore, EPA has conducted an evaluation of the available information on both Belugas and the Alaska Nitrogen Products discharge. Based on this evaluation, EPA has tentatively determined that the discharge is **not likely to adversely effect** the Belugas. EPA is consulting informally with NMFS and the Cook Inlet tribes regarding this determination.

B. Essential Fish Habitat

Section 305(b) of the Magnuson-Stevens Act (16 USC 1855(b)) requires federal agencies to consult with NMFS when any activity proposed to be permitted, funded, or undertaken by a federal agency may have an adverse effect on designated Essential Fish Habitat (EFH) as defined by the Act. The EFH regulations define an *adverse effect* as any impact which reduces quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site-specific, or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. EPA has prepared an EFH assessment in Appendix E.

EPA has tentatively determined that issuance of this permit has **no effect** on EFH in the vicinity of the discharge. EPA has provided NMFS with copies of the draft permit and fact sheet during the public notice period. Any comments received from NMFS regarding EFH will be considered prior to reissuance of this permit.

C. Tribal Consultation

EPA has developed the draft permit after government-to-government consultation with Tribes in the Kenai area. In particular, the Tribes have expressed concerns about the potential impact of wastewater discharges on Beluga whale populations

in Cook Inlet. To address tribal questions and concerns, EPA has reviewed available information about Alaska Nitrogen Product's discharge and the life history of Beluga whales. Based on this review, EPA has determined that the discharge is **not likely to adversely affect** Beluga whale populations.

After consultation with the Tribes, EPA proposes to require Alaska Nitrogen Products to provide copies of all monitoring reports to a tribal information repository to be coordinated by the Native Village of Salamatof.

D. State Certification

Section 401 of the Clean Water Act requires EPA to seek certification from the State that the permit is adequate to meet State water quality standards before issuing a final permit. The regulations allow for the State to stipulate more stringent conditions in the permit, if the certification cites the Clean Water Act or State law references upon which that condition is based. In addition, the regulations require a certification to include statements of the extent to which each condition of the permit can be made less stringent without violating the requirements of State law.

Part of the State's certification is authorization of a mixing zone. The draft permit has been sent to the State to begin the final certification process. If the State authorizes a different mixing zone(s) in its final certification, EPA will recalculate the effluent limitations in the final permit based on the dilution available in the final mixing zone(s). If the State does not certify the mixing zone(s), EPA will recalculate the permit limitations based on meeting water quality standards at the point of discharge (zero dilution).

E. Coastal Zone Management Act (CZMA)

The state of Alaska will be reviewing this permit to determine consistency with the Coastal Zone Management Act.

F. Permit Expiration

This permit will expire **five years from the effective date** of the permit.

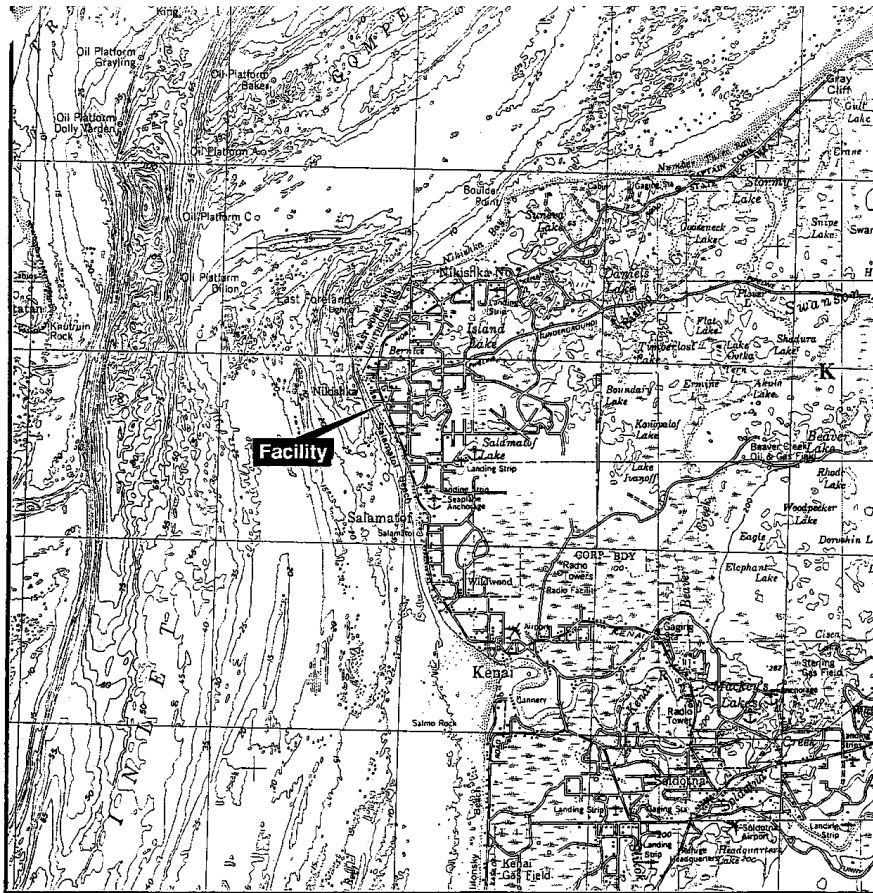
REFERENCES

EPA 1982. Development Document for Effluent Limitations Guidelines and Standards and Pretreatment Standards for the Steam Electric Point Source Category.. November 1982. EPA/440/1-82/029.

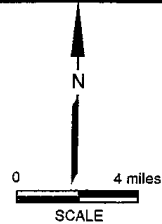
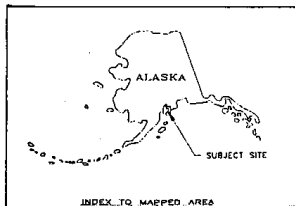
EPA 1991. Technical Support Document for Water Quality-based Toxics Control. Office of Water Enforcement and Permits, Office of Water Regulations and Standards. Washington, D.C., March 1991. EPA/505/2-90-001.

EPA. February 2000. The Cook Inlet Beluga Whale, its Life Cycle, and Potential Impacts From Five NPDES Dischargers Report.

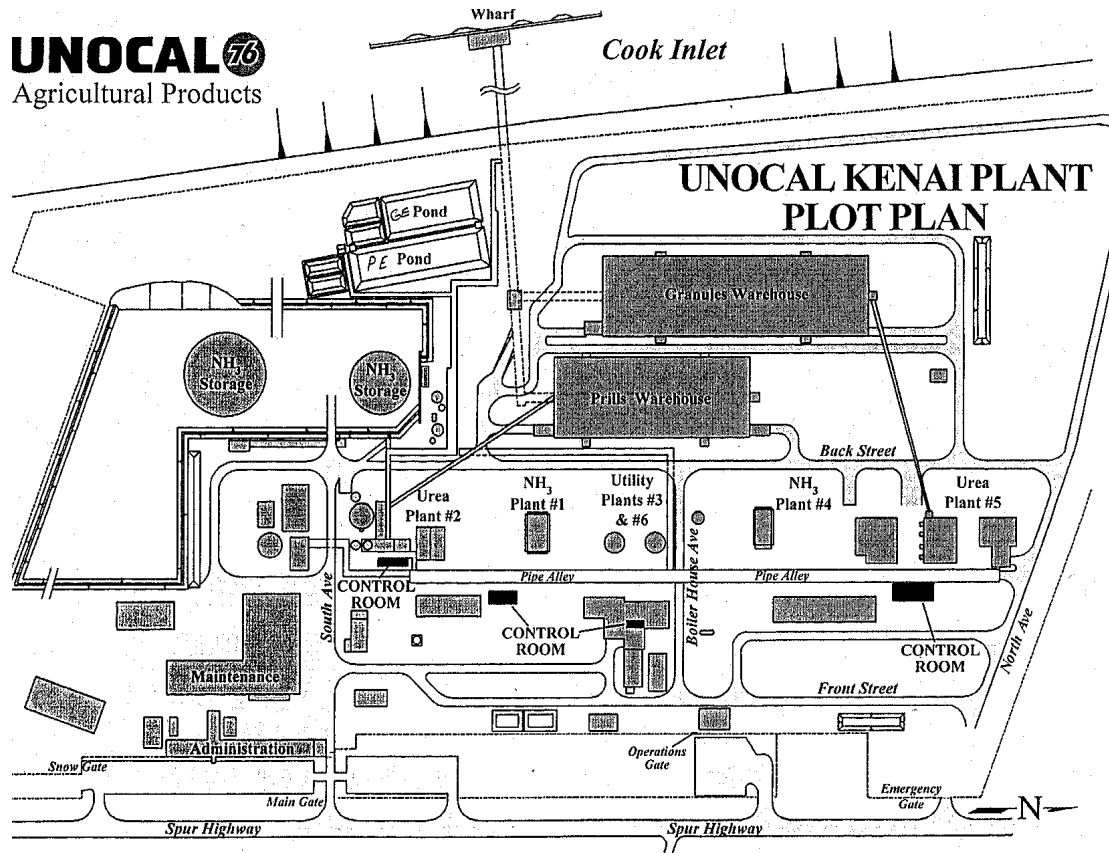
APPENDIX A - ALASKA NITROGEN PRODUCTS FACILITY MAP



SOURCE: FROM THE USGS MAP, KENAI, ALASKA.
TOPOGRAPHIC-BATHYMETRIC MAPS, 1958, LIMITED REVISION 1986



UNOCAL 76
Agricultural Products



APPENDIX B - ALASKA NITROGEN PRODUCTS TREATMENT PROCESSES

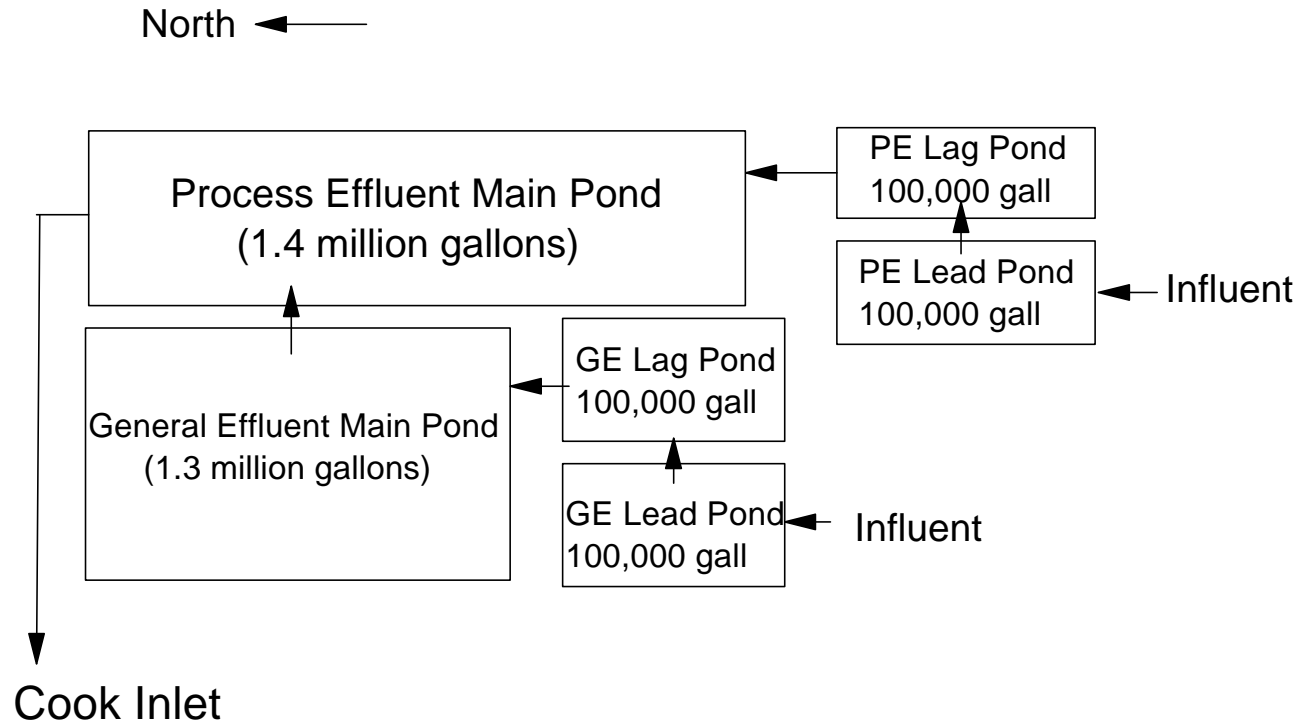


Figure B-1 - Alaska Nitrogen Products Flow Diagram

APPENDIX C - BASIS FOR EFFLUENT LIMITATIONS

I. Statutory and Regulatory Basis for Limits

Sections 101, 301(b), 304, 308, 401, 402, and 405 of the Clean Water Act provide the basis for the effluent limitations and other conditions in the draft permit. The EPA evaluates the discharge(s) with respect to these sections of the Clean Water Act and the relevant National Pollutant Discharge Elimination System (NPDES) regulations to determine which conditions to include in the draft permit.

In general, EPA first determines which technology-based limits must be incorporated into the permit. EPA then evaluates the effluent quality expected to result from these controls, to see if it could result in any exceedences of the water quality standards in the receiving water. If exceedences could occur, EPA must include water quality-based limits in the permit. The draft permit limits reflect whichever requirements (technology-based or water quality-based) are more stringent. The technology-based and water quality-based evaluations are described below.

II. Technology-based Evaluation

Section 301(b)(2) of the Clean Water Act requires technology-based controls on effluents. This section of the Clean Water Act requires that, by March 31, 1989, all permits contain effluent limitations which: (1) control toxic pollutants and nonconventional pollutants through the use of "best available technology economically achievable" (BAT), and (2) represent "best conventional pollutant control technology" (BCT) for conventional pollutants. In no case may BCT or BAT be less stringent than "best practicable control technology currently available" (BPT), which is a minimum level of control required by section 301(b)(1)(A) the Clean Water Act.

The effluent guidelines and standard for fertilizer manufacturing can be found in the Code of Federal Regulations (CFR) at 40 CFR Part 418. Alaska Nitrogen Products is regulated under Subpart B (Ammonia Subcategory) and Subpart C (Urea Subcategory). Generally, technology-based effluent guidelines are based on production. Section 418.23 of Subpart B and Section 418.33 of Subpart C establish BAT for ammonia (as N), organic nitrogen (as N), and pH based on annual average production. To calculate effluent limitations, the annual average production is multiplied by the effluent guidelines.

Table C-1: BCT for Alaska Nitrogen Products (40 CFR Part 418)		
Effluent characteristics	Ammonia Effluent Limitations	
	Daily Maximum Limit	Monthly Average Limit
Ammonia (as N), lbs/1,000 lbs of product	0.05	0.025
	Urea Effluent Limitations	
Ammonia (as N), lbs/1,000 lbs of product	0.53	0.27
Organic Nitrogen (as N) lbs/1,000 lbs of product	0.86	0.46

As noted in Table C-1, the effluent guidelines for ammonia and organic nitrogen depend on the type and magnitude of production. The average daily production of anhydrous ammonia is 3,619 tons/day and urea is 3,089 tons/day. Table C-2 shows the technology-based limits for ammonia and organic nitrogen.

Table C-2: Technology-based Limits for Alaska Nitrogen Products		
Parameter	Daily Maximum Limit	Monthly Average Limit
Ammonia (as N), lbs/day	1818	925
pH, standard units	6.0 - 9.0	---
Organic Nitrogen (as N), lbs/day	2657	1421

III. Water Quality-based Evaluation

In addition to the technology-based limits discussed above, EPA evaluated the discharge to determine compliance with Section 301(b)(1)(C) of the Clean Water Act. This section requires the establishment of limitations in permits necessary to meet water quality standards by July 1, 1977.

The regulations at 40 CFR 122.44(d) implement section 301(b)(1)(C) of the Clean Water Act. These regulations require that NPDES permits include limits for all pollutants or parameters which “are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.” The limits must be stringent enough to ensure that water quality standards are met, and must be consistent

with any available wasteload allocation. The draft permit includes water quality-based limits for oil and grease and pH.

In determining whether water quality-based limits are needed and developing those limits when necessary, EPA uses the approach outlined below:

1. Determine the appropriate water quality criterion
2. Determine whether there is “reasonable potential” to exceed the criterion
3. If there is “reasonable potential”, develop a wasteload allocations
4. Develop effluent limitations based on WLAs

The following sections provide a detailed discussion of each step. Appendix D provides an example calculation to illustrate how these steps are implemented.

A. Water Quality Criteria

The first step in developing water quality-based limits is to determine the applicable water quality criteria. For Alaska, the State water quality standards are found at 18 AAC 70.020.2. The applicable criteria are determined based on the beneficial uses of the receiving water. Beneficial uses for Cook Inlet are: aquaculture, seafood processing and industrial water supply; primary and secondary contact recreation; growth and propagation of fish, shellfish, other aquatic life, and wildlife; and harvesting for consumption of raw mollusks or other raw aquatic life.

For any given pollutant, different uses may have different criteria. To protect all beneficial uses, the permit limits are based on the most stringent of the water quality criteria applicable to those uses.

B. “Reasonable Potential” Evaluation

To determine if there is “reasonable potential” to cause or contribute to an exceedence of water quality criteria for a given pollutant, EPA compares the maximum projected receiving water concentration to the criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is “reasonable potential,” and a limit must be included in the permit. EPA uses the recommendations in Chapter 3 of the *Technical Support Document for Water Quality-based Toxics Control* (TSD, EPA 1991) to conduct this “reasonable potential” analysis.

The maximum projected receiving water concentration is determined using the following mass balance equation. As the mass balance shows, the maximum projected receiving water concentration is based on the maximum projected

effluent concentration, dilution (if available), and the background pollutant concentration.

$$C_d = \frac{C_e}{D} + C_u \quad \text{where,}$$

C_d = concentration of discharge at the edge of the mixing zone

C_u = upstream concentration

C_e = maximum projected effluent concentration

D = dilution

Section 1 through 3 below discusses each of the factors used in the mass balance equation to calculate C_m . Section 4 discusses the actual “reasonable potential” calculation for Alaska Nitrogen Products’s discharge.

1. Ambient Concentration

The ambient concentration in the mass balance equation is based on a reasonable worst-case estimate of the pollutant concentration upstream from Alaska Nitrogen Products’s discharge. For criteria that are expressed as maxima (for example, copper, ammonia), the 95th percentile of the ambient data is generally used as an estimate of worst-case. For criteria that are expressed as minima (for example, dissolved oxygen) the 5th percentile of the ambient data is generally used as an estimate of worst-case.

2. Effluent Concentration

The maximum projected effluent concentration in the mass balance equation is represented by the 99th percentile, calculated using the statistical approach recommended in the TSD. The 99th percentile effluent concentration is calculated by multiplying the maximum reported effluent concentration by a reasonable potential multiplier. The reasonable potential multiplier accounts for uncertainty in the data. The multiplier decreases as the number of data points increases and variability of the data decreases. Variability is measured by the coefficient of variation (CV) of the data. When there are not enough data to reliably determine a CV, the TSD recommends using 0.6 as a default value. A partial listing of reasonable potential multipliers can be found in Table 3-1 of the TSD. EPA evaluated Alaska Nitrogen Products’s discharge monitoring reports from August 1989 to the present to determine the projected maximum effluent concentrations.

3. Dilution

A chronic dilution for total ammonia of 721 to 1 was used in the reasonable potential analysis. A chronic dilution of 224 to 1 was provided for mercury, zinc, copper, arsenic and WET and was used in the chronic reasonable potential evaluations. An acute dilution of 102 to 1 was used in the reasonable potential determinations for mercury, copper, and total ammonia. If ADEC authorizes a different size mixing zone(s) in its final certification, EPA will recalculate the reasonable potential and effluent limits based on the final mixing zone(s). If no mixing zone is authorized in the final certification, EPA will recalculate the limits based on meeting water quality criteria at the point of discharge.

4. "Reasonable potential" calculations

In evaluating whether there is reasonable potential to cause or contribute to a violation of State water quality standards, EPA considered the following sources of information:

Alaska Nitrogen Products's NPDES application (2c) form (October 28, 1999),
Alaska Nitrogen Products's Mixing Zone Application (June 2000), and
Discharge Monitoring Reports (DMRs) from 1989 - present.

When all effluent data for a particular pollutant were below the detection limit, EPA assumed that there was no reasonable potential. Section IV, below, discusses the development of effluent limitations for specific pollutants.

C. Wasteload Allocation Development

Once the need for a permit limit is established, the first step in developing the limit is developing a wasteload allocation (WLA) for the pollutant. A WLA is the concentration (or loading) of a pollutant that a facility may discharge without causing or contributing to an exceedence of water quality standards in the receiving water. WLAs for this permit were established based on a mixing zone, and based on meeting criteria at "end-of-pipe".

1. Mixing zone

Where the State authorizes a mixing zone for a discharge, the WLA is calculated as a mass balance, based on the available dilution, background concentrations of the pollutant(s), and the water quality criteria. The mass balance equation is the same as that used to calculate reasonable potential, with the acute or chronic criterion substituted for C_m and the WLA substituted for C_e . Because the different criteria (acute aquatic life, chronic aquatic life, human health) apply over different time frames and may have different mixing zones, it is not possible to compare them directly to determine which criterion results in the most stringent limits. For example, the acute criteria are applied as one-hour averages and may have a smaller mixing zone, while the chronic criteria are applied as four-day averages and may have a larger mixing zone. To allow for comparison, each criterion is statistically converted to a long-term average WLA. This conversion is dependent upon the CV of the effluent data and the probability basis used. The probability basis corresponds to the percentile of the estimated concentration. EPA uses a 99th percentile probability basis for calculating a long-term average, as recommended in the TSD. Based on this analysis, the criterion that results in the most stringent long-term average WLA is used to calculate the permit limits.

2. “End-of-Pipe” WLA

In some cases, there is no dilution available, either because the receiving water exceeds the criteria or because the State has decided not to authorize a mixing zone for a particular pollutant. When there is no dilution, the criterion becomes the WLA.

D. Permit Limit Derivation

Once the WLA has been developed, EPA applies the statistical permit limit derivation approach described in Chapter 5 of the TSD to obtain daily maximum and monthly average permit limits. This approach takes into account effluent variability (through the coefficient of variation), sampling frequency, and the difference in time frames between the monthly average and daily maximum limits.

The daily maximum limit is based on the CV of the data and the probability basis, while the monthly average limit is dependent on these two variables and the monitoring frequency. As recommended in the TSD, EPA used a probability basis of 95 percent for monthly average limit calculation and 99 percent for the daily maximum limit calculation. Where there were not enough data to calculate

a CV, EPA assumed a CV of 0.6 for both monthly average and daily maximum calculations. Appendix D contains an example permit limit derivation.

E. Antidegradation

In addition to water quality-based limitations for pollutants that could cause or contribute to exceedences of standards, EPA must consider the State's antidegradation policy. This policy is designed to protect existing water quality when the existing quality is better than that required to meet the standard and to prevent water quality from being degraded below the standard when existing quality just meets the standard. For high quality waters, antidegradation requires that, before any degradation is authorized, the State must find that allowing lower water quality is necessary to accommodate important economic or social development. This means that, if water quality is better than necessary to meet the water quality standards, increased permit limits can be authorized only if they do not cause degradation or if the State makes the determination that it is necessary. See the discussion for each pollutant in section IV, below, for the determination of whether antidegradation applies for that pollutant.

IV. Pollutant-specific Analyses

This section discusses the way in which the steps in section III were implemented to determine reasonable potential for pollutants of concern and, where appropriate, to establish limits.

A. Total Ammonia (as N)

The 1989 and draft permit contain technology-based limits for total ammonia measured as nitrogen. Recently, the Alaska Department of Environmental Quality adopted new Water Quality Standards for ammonia based on EPA's national criteria. This ammonia criteria was considered when determining reasonable potential consistent with the state's narrative criteria (18 AAC 70.020.2) that prevents toxic substances in concentrations that cause toxic effects on aquatic life. As outlined in detail in Appendix D, due to the acute and chronic mixing zones provided by the state, the reasonable potential to violate the criteria is not demonstrated and water quality-based permit limits are not needed. Therefore, the technology-based maximum daily limits of 1818 lbs/day and 140 mg/L and average monthly limits of 925 lbs/day and 71 mg/L apply. Because these limits are more stringent than those in the 1989 permit, antidegradation and anti-backsliding do not apply.

B. Organic Nitrogen (as N)

The 1989 permit contained technology-based limits for organic nitrogen measured as nitrogen. The draft average monthly limits of 109 mg/L and 1421 lbs/day and maximum daily limits of 204 mg/L and 2657 lbs/day have been recalculated using the production-based multipliers and current production data for urea. Because these limits are more stringent than those in the 1989 permit, antidegradation and anti-backsliding do not apply.

C. pH

The 1989 permit contains a technology-based pH range of 6.0 to 9.0. Since that time, a water quality-based range from 6.5 to 8.5 was adopted for the protection of aquacultural water supply and primary contact recreation. Therefore, the more stringent water quality-based range is found in the draft permit. Because these limits are more stringent than those in the 1989 permit, antidegradation and anti-backsliding do not apply. Because effluent pH must be within the limited range at all times and since the facility monitors pH on a continuous basis, they are required to comply the range 99% of the time (40 CFR 401.17). Therefore, the total time which pH values are outside the required range shall not exceed 7 hours and 26 minutes in any calendar month, and no individual excursion from the range shall exceed 60 minutes.

D. Oil and Grease

The previous 1989 permit contained a maximum daily limit for oil and grease of 15 mg/L to be achieved no later than July 31, 1990. This original limit was based on a finding by ADEC that a concentration of 15 mg/L will usually not produce a sheen and will comply with the states standards. Consistent with the state's antidegradation policy the limit is retained in the draft permit.

The State Water Quality Standard found at 18 AAC 70.020(b)(2) requires that total aromatic hydrocarbons (TAH) in the water column not exceed 10 Fg/L and that total aqueous hydrocarbons (TAqH) not exceed 15 Fg/L in the water column. Data is not available for TAH or TAqH to determine compliance with these criteria therefore, quarterly monitoring is required for the life of the permit.

E. Whole Effluent Toxicity

Upon reviewing the facility's previous monitoring records, the maximum whole effluent toxicity (WET) reported is 76.9 TU_c and 21.7 TU_a. Upon finding these toxicity levels, the facility conducted a Toxicity Reduction Evaluation (TRE) and found no further toxicity. Using the state's preliminary chronic mixing zone of 1:224, there is no reasonable potential to cause or contribute to an exceedence of the chronic water quality criteria for WET. However, EPA is retaining the chronic toxicity testing in the draft permit to be conducted quarterly on the most

sensitive available species. This monitoring is important for larger facilities and will determine whether or not compliance is met at the new mixing zone. Because WET limits were not in the previous permits antidegradation and anti-backsliding do not apply.

F. Metals

Alaska Nitrogen Products is required to monitor their effluent prior to submitting an application for a permit renewal. Because the available monitoring was limited, EPA requested that the facility conduct additional monitoring for mercury, arsenic, copper and zinc. The additional data was analyzed by EPA for the reasonable potential to violate Alaska's water quality criteria. The reasonable potential to violate state acute and chronic criteria was not found for for arsenic and zinc therefore, limits were not required. The reasonable potential to violate acute and chronic water quality criteria for mercury and copper also was not found after considering the state's preliminary acute and chronic cylindrical mixing zones of 1 meter radius and 3.5 meters radius.

G. Foam/Floating Solids

Alaska's standards for residue state that the discharge "1) may not, alone or in combination with other substances or wastes, make the water unfit or unsafe for use, or cause acute or chronic problem levels as determined by bioassay or other appropriate methods 2) may not alone or in combination with other substances, cause a film, sheen, or discoloration on the surface or floor of the water body or adjoining shorelines, cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water... or upon adjoining shorelines."

APPENDIX D - SAMPLE REASONABLE POTENTIAL CALCULATION FOR TOTAL AMMONIA

This appendix describes how the reasonable potential analysis was conducted for total ammonia. The calculations were performed according to procedures outlined in Chapter 5 of the TSD.

Step 1 - Determine the appropriate water quality criteria

The water quality criteria is determined based on the use of the receiving water. Cook Inlet is protected by the State of Alaska for the following uses: domestic and agricultural water supply, cold water biota, and primary and secondary recreation. The state approved criteria tables for total ammonia are based on pH, temperature, and salinity. EPA used East Foreland ambient data to calculate the total **ammonia acute criteria of 8.0 mg/L** and **chronic criteria of 1.22 mg/L**.

Step 2 - Determine whether there is "reasonable potential" to exceed the criteria

There is RP to exceed water quality criteria if the maximum projected concentration of the pollutant exceeds the criterion. A chronic mixing zone (dilution) has been provided from the state in a preliminary authorization. The maximum projected ammonia concentration is calculated using the following mass-based equation:

$$C_d = \frac{C_e}{\text{Dilution}} + C_u$$

where,

C_d = receiving water concentration downstream of the effluent discharge

C_e = maximum projected effluent concentration (525.4 mg/L)

= maximum reported effluent concentration (392.1 mg/L) X reasonable potential multiplier (1.34)

In calculating the reasonable potential multiplier, EPA assumed a sampling frequency of four per month, and used a coefficient of variation of 0.62 based on monthly data reported between 1989 to the present.

C_u = upstream concentration of pollutant (0 mg/L)

Dilution = 1:721 for chronic criteria

= 1:102 for acute criteria

0.73 mg/L < chronic criteria of 1.22 mg/L

5.15 mg/L < acute criteria of 8.0 mg/L

Because the downstream concentrations of total ammonia are less than the criterion, water quality-based effluent limits have not been included in the permit.

APPENDIX E - ESSENTIAL FISH HABITAT ASSESSMENT

Pursuant to the requirements for Essential Fish Habitat (EFH) assessments, this appendix contains the following information:

- (1) Listing of EFH Species in the Facility Area
- (2) Description of the Facility and Discharge Location
- (3) EPA's Evaluation of Potential Effects to EFH

1. Listing of EFH Species in the Facility Area

Cook Inlet is designated as essential fish habitat for: Pacific cod, and Pink, Chum, Chinook, and Coho salmon (*Habitat Assessment Reports for Essential Fish Habitat*, National Marine Fisheries Service, 1998).

2. Description of the Facility and Discharge Location

The activities and sources of wastewater at the Alaska Nitrogen Products facility are described in detail in Part II ("Facility Activity") of this fact sheet. The location and physical features of the outfall location are described in Part III ("Receiving Water").

3. EPA's Evaluation of Potential Effects to EFH

Water quality is an important component of aquatic life habitat. NPDES permits are developed to protect water quality in accordance with state water quality standards. The standards protect the beneficial uses of the waterbody, including all life stages of aquatic life. The development of permit limits for an NPDES discharger includes the basic elements of ecological risk analysis. The underlying technical process leading to NPDES permit requirements incorporates the following elements of risk analysis:

Effluent Characterization

Characterization of effluent constituents using information from a variety of sources, including:

- Priority pollutant scans
- Permit compliance monitoring
- Whole effluent toxicity testing
- Effluent variability
- Quality assurance evaluations

Identification of Pollutants of Concern and Threshold Concentrations

Identification of pollutants of concern, including:

Pollutants with aquatic life criteria in the Alaska Water Quality Standards
Other pollutants of concern based on available information

Exposure and Wasteload Allocation

Analysis of the transport of pollutants near the discharge point with respect to the following:

Mixing zone policies in the Alaska Water Quality Standards
Dilution modeling and analysis
Exposure considerations (e.g., prevention of lethality to passing organisms)
Consideration of multiple sources and natural background concentrations
Total Maximum Daily Loads (where appropriate)

Statistical Evaluation for Permit Limit Development

Calculation of permit limits using statistical procedures addressing the following:

Effluent variability and non-continuous sampling
Fate/transport variability
Duration and frequency thresholds identified in the water quality criteria

Monitoring Programs

Development of monitoring requirements, including:

Compliance monitoring of the effluent
Ambient monitoring

EPA's approach to aquatic life protection is outlined in detail in the Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001, March 1991).

EPA and states evaluate toxicological information from a wide range of species and life stages in establishing water quality criteria for the protection of aquatic life. For example, the criteria for ammonia in saltwater adopted by the State of Alaska are based on bioassays (predominantly acute tests) of 21 marine species in 18 genera.

The NPDES program evaluates a wide range of chemical constituents (as well as whole effluent toxicity testing results) to identify pollutants of concern with respect to the criteria values. When

a facility discharges a pollutant at a level that has a “reasonable potential” to exceed the water quality criteria, permit limits are established to prevent exceedences of the criteria in the receiving water (outside any authorized mixing zone).

Since the proposed permit has been developed to protect aquatic life species in Cook Inlet in accordance with the Alaska water quality standards, EPA has tentatively determined that issuance of this permit will have **no effect** any EFH in the vicinity of the discharge. EPA will provide NMFS with copies of the draft permit and fact sheet during the public notice period. Any recommendations received from NMFS regarding EFH will be considered prior to reissuance of this permit.